



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,151	07/28/2003	Robin Dale Katzer	IDF 2393 4000-12700	4360
28003	7590	05/29/2007		
SPRINT			EXAMINER	
6391 SPRINT PARKWAY			STACE, BRENT S	
KSOPHT0101-Z2100				
OVERLAND PARK, KS 66251-2100			ART UNIT	PAPER NUMBER
			2161	
			MAIL DATE	DELIVERY MODE
			05/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/628,151

Applicant(s)

KATZER, ROBIN DALE

Examiner

Brent S. Stace

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. This communication is responsive to the amendment filed April 2nd, 2007. Claims 1-29 are pending. In the amendment filed April 2nd, 2007, no claims were amended, and Claims 1, 14, 20, and 24 are independent Claims. The examiner acknowledges that no new matter was introduced and the claims are supported by the specification. This action is made FINAL.

Response to Arguments

2. Applicant's arguments filed April 2nd, 2007 with respect to Claims 1-29 have been fully considered but they are not persuasive.

3. With respect to the applicant's argument with respect to Claims 1-29 for the prior art(s) allegedly not teaching "allowing the application that is utilizing the data to determine how the data will be cached" because Coram allegedly "does not have any control over how RS cache 106 manages the cached data," the examiner respectfully disagrees. TimesTen, p. 591, section 4.3 teaches what appears to be the "an application utilizing data and having a rule related to caching the data" limitation related to this argument. Only TimesTen was used in rejecting this limitation. TimesTen explicitly teaches in the cited section "applications read and update data cached in TimesTen [an in-memory database cache]." This explicitly teaches that applications utilize cached data. These same applications, in the cited section "indicate[] how

frequently refreshes ought to take place, and TimesTen automatically refreshes the Cache Group" (under Full Autorefresh). Additionally, other refresh policies exist (refresh, and Incremental Autorefresh, simplified under the bullet points) that determine how the data will be cached by the application. Regardless of if Coram does not have any control over how RS cache 106 manages the cached data is inconsequential to this argument since only TimesTen was used in rejecting this associated limitation.

4. With respect to the applicant's argument with respect to Claims 1-29 for the prior art(s) allegedly not teaching "an engine operable to monitor the in-memory database system and apply the rule to the cached data; wherein the engine monitors the in-memory database system and applies the rule to the cached data without the involvement of the application or the in-memory database system," the examiner respectfully disagrees. Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-592, section 4.3 with Coram, paragraphs [0027], [0030], [0033], [0034], and [0036] were used in mapping these limitations.

Specifically, Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-592, section 4.3 were used in rejecting "an engine operable to monitor the in-memory database system and apply the rule to the cached data." The cited sections of Coram teach that the RS Cache employs processes for cache freshness and RS Cache caches (or not) result set(s) (dependent on cache-worthiness). Additionally, the cited sections of TimesTen teach (under Incremental Autorefresh) that TimesTen, as with Full Autorefresh, automatically performs the incremental refresh at the specified frequency. Using TimesTen, TimesTen must monitor the cache, for instance the time

Art Unit: 2161

since the last refresh, in order to know when to refresh. When Coram is used as TimesTen (using the combination), Coram's RS Cache then must monitor itself (the time since the last refresh) in order to know when to refresh. When to refresh is at least a rule of the claims since refreshing is a rule related to caching data (as claimed).

Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-592, section 4.3 were also used in rejecting "wherein the engine monitors the in-memory database system and applies the rule to the cached data." Since this limitation is merely stating the limitation above, the response to the argument regarding this limitation is found above.

Coram, paragraphs [0027], [0030], [0033], [0034], [0036], and [0047] were used in rejecting "without the involvement of the application or the in-memory database system." As shown in Coram, and keeping in mind the response above, at least Coram [0034] (in relation to Fig. 1) teaches this limitation well. As shown and described, the RS Cache 106 is completely separated from the application 102 and database 104. As discussed above, the application signals the frequency of refreshes to the RS Cache, and the RS Cache (itself) will refresh on the frequency. Since the RS Cache is doing the refreshing (essentially applying a rule), the step of refreshing does not involve the application or the database in order to go about applying the rule.

5. With respect to the applicant's argument with respect to Claims 1-29 for the prior art(s) allegedly not teaching "applying application-specific cache management rules to the cache data," the examiner respectfully disagrees. This argument appears to have been met by the above argument since it appears to be based (but not explicitly recited in the claim) on the limitations above.

Art Unit: 2161

6. The other claims argued merely because of a dependency on a previously argued claim(s) in the arguments presented to the examiner, filed April 2nd, 2007, are moot in view of the examiner's interpretation of the claims and art and are still considered rejected based on their respective rejections from a prior Office action (recited again below).

Response to Amendment

Specification

7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Mid-Tier Caching: The TimesTen Approach" (TimesTen) in view of U.S. Patent Application Publication No. 2002/0107835 (Coram et al.).

For **Claim 1**, TimesTen teaches: "A cache management system stored on a computer readable medium, [TimesTen, p. 588, last paragraph] comprising:

- an in-memory database system for managing cached data; [TimesTen, p. 589, paragraphs above and below section header 3]
- an application utilizing data and having a rule related to caching the data; [TimesTen, p. 591, section 4.3]
- a wrapper to receive the data from the application and provide at least a portion of the data and a component of the rule to the in-memory database system..." [TimesTen, p. 589, paragraph under section header 3 with TimesTen, p. 590, paragraph under section header 4 with TimesTen, p. 591-592, section 4.3].

TimesTen discloses the above limitations but does not expressly teach:

- "...an engine operable to monitor the in-memory database system and apply the rule to the cached data;
- wherein the engine monitors the in-memory database system and applies the rule to the cached data without the involvement of the application or the in-memory database system."

With respect to Claim 1, an analogous art, Coram, teaches:

- "...an engine operable to monitor the in-memory database system and apply the rule to the cached data; [Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-592, section 4.3]
- wherein the engine monitors the in-memory database system and applies the rule to the cached data [Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-

Art Unit: 2161

592, section 4.3] without the involvement of the application or the in-memory database system" [Coram, paragraphs [0027], [0030], [0033], [0034], [0036], and [0047]].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Coram and TimesTen before him/her to combine Coram with TimesTen because both inventions are directed towards caching data.

Coram's invention would have been expected to successfully work well with TimesTen's invention because both inventions use caches for databases. TimesTen discloses an in-memory database data manager with mid-tier caching comprising maintaining rules for cache management. However, TimesTen does not expressly disclose the engine applying rules without involvement of the application or the in-memory database system. Coram discloses a system and method for adaptive result set caching comprising a cache as a driver separate from an application and database handling caching techniques/rules.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Coram and TimesTen before him/her to take the caching techniques and system structure(s) from Coram and install it into the invention of TimesTen, thereby offering the obvious advantage of providing rapid access to subset of data (Coram, paragraph [0008]).

Claim 2 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the component of the rule is further

defined as a first component and a second component of the rule" [TimesTen, p. 591-592, section 4.3 with/or Coram, paragraphs [0054] and [0056]].

Claim 3 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the rule is further defined as instructions for cache management of the data" [TimesTen, p. 591-592, section 4.3 with/or Coram, paragraphs [0054] and [0056]].

Claim 4 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the data is application data and wherein the rule for cache management of the data is related to the application" [TimesTen, p. 591-592, section 4.3 with TimesTen, p. 590, paragraph under section header 4 with/or Coram, paragraphs [0054] and [0056]].

Claim 5 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the wrapper receives at least a portion of the data from the application and the wrapper provides a part of the at least a portion of the data to the in-memory database system" [TimesTen, p. 589, paragraph under section header 3 with TimesTen, p. 590, paragraph under section header 4 with TimesTen, p. 591-592, section 4.3].

Claim 6 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, further comprising a plug-in operable to communicate with the in-memory database system to receive the data and the component of the rule from the wrapper and communicate the data and information related to the rule to the in-memory database system" [TimesTen, page 589, paragraph

Art Unit: 2161

below section header 3, with TimesTen, page 590, paragraph under section header 4.1, TimesTen, page 591, paragraph above section header 4.3 with/or Coram, paragraphs [0027], [0030], [0033], [0034], [0036], and [0047]].

Claim 7 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the engine is operable to obtain the component of the rule from the in-memory database and to obtain the instruction for cache management of the data related to the component of the rule and further operable to execute the instructions to apply the rule to the data" [TimesTen, p. 591-592, section 4.3 with/or Coram, paragraphs [0045]-[0047]].

Claim 8 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the rule is defined as an asynchronous rule" [TimesTen, p. 591-592, section 4.3 with/or Coram, paragraphs [0047]-[0052]].

Claim 9 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the rule is defined as a synchronous rule" [TimesTen, p. 591-592, section 4.3 with/or Coram, paragraphs [0047]-[0052]].

Claim 10 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the rule includes a refresh data instruction whereby the engine is operable to obtain current data from a database" [TimesTen, p. 591-592, section 4.3 with/or Coram, paragraph [0054]].

Claim 11 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the rule includes a tenure data

instruction whereby the engine is operable to release the data after a time period"
[TimesTen, p. 591, section 4.2 with/or Coram, paragraph [0050]].

Claim 12 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the rule includes a persist data instruction whereby the engine is operable to release the data after a time period [TimesTen, p. 591, section 4.2] unless the data is requested before the expiration of the time period" [Coram, paragraph [0050] or TimesTen, p. 591, section 4.2].

For the TimesTen citation, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the two embodiments of TimesTen (as modified by Coram) because both embodiments are directed towards caching data.

TimesTen (as modified by Coram) discloses an in-memory database data manager with mid-tier caching comprising caching out data based on duration time in the cache, however TimesTen (as modified by Coram) does not expressly disclose in the same embodiment LRU caching. TimesTen (as modified by Coram) discloses an in-memory database data manager with mid-tier caching comprising caching out data based on duration time in the cache comprising an LRU cache replacement scheme based on last time of access.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the LRU cache replacement scheme from one embodiment of TimesTen (as modified by Coram) and install it into the cache aging duration replacement scheme of TimesTen (as modified by Coram), thereby offering the obvious advantage of not inappropriately replacing or caching-out data from the cache when it

Art Unit: 2161

may be used again later or shortly later, thereby increasing the speed of the system by relying on cached data.

Claim 13 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 1, wherein the component of the rule is further defined as a rule type" [TimesTen, p. 591-592, section 4.2-4.3 with/or Coram, paragraph [0054]].

For **Claim 14**, TimesTen teaches: "A system stored on a computer readable medium for managing cached data, [TimesTen, p. 588, last paragraph] comprising:

- a first application server; [TimesTen, p. 589, first paragraph and figure under section header 2]
- an application operable on the first application server, [TimesTen, p. 588, first paragraph] the application utilizing data and having a rule related to a cache management of the data; [TimesTen, p. 591-592, section 4.3]
- a second application server; [TimesTen, p. 589, first paragraph and figure under section header 2]
- an in-memory database management system operable on the second application server to receive the data; [TimesTen, pgs. 589-590, second paragraph under section header 3]
- a wrapper in communication with the application to receive a component of the rule from the application and provide the component of the rule to the in-memory database system..." [TimesTen, p. 589, paragraph under section header 3 with

TimesTen, p. 590, paragraph under section header 4 with TimesTen, pgs. 591-592, section 4.3].

TimesTen discloses the above limitations but does not expressly teach:

- "...an engine operable to monitor the in-memory database system and apply the rule to the cached data;
- wherein the engine monitors the in-memory database system and applies the rule to the cached data without the involvement of the application or the in-memory database management system."

With respect to Claim 14, an analogous art, Coram, teaches:

- "...an engine operable to monitor the in-memory database system and apply the rule to the cached data; [Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-592, section 4.3]
- wherein the engine monitors the in-memory database system and applies the rule to the cached data [Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-592, section 4.3] without the involvement of the application or the in-memory database management system" [Coram, paragraphs [0027], [0030], [0033], [0034], [0036], and [0047]].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Coram and TimesTen before him/her to combine Coram with TimesTen because both inventions are directed towards caching data.

Coram's invention would have been expected to successfully work well with TimesTen's invention because both inventions use caches for databases. TimesTen

Art Unit: 2161

discloses an in-memory database data manager with mid-tier caching comprising maintaining rules for cache management. However, TimesTen does not expressly disclose the engine applying rules without involvement of the application or the in-memory database system. Coram discloses a system and method for adaptive result set caching comprising a cache as a driver separate from an application and database handling caching techniques/rules.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Coram and TimesTen before him/her to take the caching techniques and system structure(s) from Coram and install it into the invention of TimesTen, thereby offering the obvious advantage of providing rapid access to subset of data (Coram, paragraph [0008]).

Claim 15 can be mapped to TimesTen (as modified by Coram) as follows: "The system of Claim 14, wherein the engine is operable on the first application server" [TimesTen, p. 589, section 2 with TimesTen, pgs. 589-590, second paragraph under section header 3 with/or Coram, paragraphs [0074]-[0078]].

Claim 16 can be mapped to TimesTen (as modified by Coram) as follows: "The system of Claim 14, wherein the wrapper is operable on the first application server" [TimesTen, p. 589, section 2 with TimesTen, pgs. 589-590, second paragraph under section header 3 with/or Coram, paragraphs [0074]-[0078]].

Claim 17 can be mapped to TimesTen (as modified by Coram) as follows: "The system of Claim 14, wherein the wrapper and the engine are operable on the first

application server" [TimesTen, p. 589, section 2 with TimesTen, pgs. 589-590, second paragraph under section header 3 with/or Coram, paragraphs [0074]-[0078]].

Claim 18 can be mapped to TimesTen (as modified by Coram) as follows: "The system of Claim 14, wherein the engine is operable on the second application server" [TimesTen, pgs. 589-590, second paragraph under section header 3 with TimesTen, pgs. 591-592, section 4.3 with/or Coram, paragraphs [0074]-[0078]].

Claim 19 can be mapped to TimesTen (as modified by Coram) as follows: "The system of Claim 14, further comprising a third application server and wherein the engine is operable on the third application server" [TimesTen, p. 589, first paragraph and figure under section header 2 with TimesTen, pgs. 589-590, second paragraph under section header 3 with TimesTen, pgs. 591-592, section 4.3 with/or Coram, paragraphs [0074]-[0078]].

For **Claim 20**, TimesTen teaches: A method of managing cached data stored on a computer readable medium, [TimesTen, p. 588, last paragraph] comprising:

- obtaining data and a component of a rule related to the data from an application; [TimesTen, p. 591, section 4.3]
- wrapping the data and the component of the rule; [TimesTen, p. 589, paragraph under section header 3 with TimesTen, p. 590, paragraph under section header 4 with TimesTen, p. 591-592, section 4.3]
- providing the wrapped data and component of the rule to an in-memory database server; [TimesTen, p. 589, paragraph under section header 3 with TimesTen, p. 590, paragraph under section header 4 with TimesTen, p. 591-592, section 4.3]

Art Unit: 2161

- monitoring the in-memory database server; [TimesTen, p. 591-592, section 4.3] and
- applying the rule to the data based on the rule component; [TimesTen, p. 591-592, section 4.3]
- wherein the application of the rule to the data occurs" [TimesTen, p. 591-592, section 4.3]

TimesTen discloses the above limitations but does not expressly teach:

- "...without the involvement of the application or the in-memory database server."

With respect to Claim 20, an analogous art, Coram, teaches:

- "...without the involvement of the application or the in-memory database server" [Coram, paragraphs [0027], [0030], [0033], [0034], [0036], and [0047]].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Coram and TimesTen before him/her to combine Coram with TimesTen because both inventions are directed towards caching data.

Coram's invention would have been expected to successfully work well with TimesTen's invention because both inventions use caches for databases. TimesTen discloses an in-memory database data manager with mid-tier caching comprising maintaining rules for cache management. However, TimesTen does not expressly disclose the engine applying rules without involvement of the application or the in-memory database system. Coram discloses a system and method for adaptive result set caching comprising a cache as a driver separate from an application and database handling caching techniques/rules.

Art Unit: 2161

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Coram and TimesTen before him/her to take the caching techniques and system structure(s) from Coram and install it into the invention of TimesTen, thereby offering the obvious advantage of providing rapid access to subset of data (Coram, paragraph [0008]).

Claim 21 can be mapped to TimesTen (as modified by Coram) as follows: "The method of Claim 20, wherein the data is further defined as application data" [TimesTen, p. 591-592, section 4.3 with TimesTen, p. 590, paragraph under section header 4 with/or Coram, paragraph [0056]].

Claim 22 can be mapped to TimesTen (as modified by Coram) as follows: "The method of Claim 20, wherein the rule is defined as an instruction related to a cache management of the data" [TimesTen, p. 591-592, section 4.3 with TimesTen, p. 590, paragraph under section header 4 with/or Coram, paragraphs [0045]-[0047] and [0054]].

Claim 23 can be mapped to TimesTen (as modified by Coram) as follows: "The method of Claim 20, wherein the component of the rule is further defined as a rule type related to the instruction" [TimesTen, p. 591-592, section 4.2-4.3 with/or Coram, paragraphs [0045]-[0047] and [0054]].

For **Claim 24**, TimesTen teaches: A cache management system stored on a computer readable medium, [TimesTen, p. 588, last paragraph] comprising:

- an application utilizing data and having a rule related to caching the data; [TimesTen, p. 591, section 4.3]

Art Unit: 2161

- an in-memory database management system to receive the data; [TimesTen, p. 589, paragraphs above and below section header 3 with TimesTen, pgs. 589-590, second paragraph under section header 3]
- a wrapper in communication with the application to receive at least a component of the rule..." [TimesTen, p. 589, paragraph under section header 3 with TimesTen, p. 590, paragraph under section header 4 with TimesTen, p. 591-592, section 4.3].

TimesTen discloses the above limitations but does not expressly teach:

- "...an engine operable to receive at least the component of the rule from the wrapper and apply the rule to cached data;
- wherein the engine applies the rule to the cached data without the involvement of the application or the in-memory database management system."

With respect to Claim 24, an analogous art, Coram, teaches:

- "...an engine operable to receive at least the component of the rule from the wrapper and apply the rule to cached data; [Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-592, section 4.3]
- wherein the engine applies the rule to the cached data [Coram, paragraphs [0045]-[0047] with TimesTen, p. 591-592, section 4.3] without the involvement of the application or the in-memory database management system" [Coram, paragraphs [0027], [0030], [0033], [0034], [0036], and [0047]].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Coram and TimesTen before him/her to combine Coram with TimesTen because both inventions are directed towards caching data.

Coram's invention would have been expected to successfully work well with TimesTen's invention because both inventions use caches for databases. TimesTen discloses an in-memory database data manager with mid-tier caching comprising maintaining rules for cache management. However, TimesTen does not expressly disclose the engine applying rules without involvement of the application or the in-memory database system. Coram discloses a system and method for adaptive result set caching comprising a cache as a driver separate from an application and database handling caching techniques/rules.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Coram and TimesTen before him/her to take the caching techniques and system structure(s) from Coram and install it into the invention of TimesTen, thereby offering the obvious advantage of providing rapid access to subset of data (Coram, paragraph [0008]).

Claim 25 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 24, wherein the data is a refresh data request" [TimesTen, p. 591, section 4.3 with/or Coram, paragraph [0054]].

Claim 26 can be mapped to TimesTen (as modified by Coram) as follows: "The cache management system of Claim 24, wherein the rule is an application specific

Art Unit: 2161

cache data rule" [TimesTen, p. 591-592, section 4.2-4.3 with/or Coram, paragraphs [0046]-[0052]].

10. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Mid-Tier Caching: The TimesTen Approach" (TimesTen) in view of U.S. Patent Application Publication No. 2002/0107835 (Coram et al.), further in view of U.S. Patent No. 6,901,383 (Ricketts et al.).

For **Claim 27**, TimesTen (as modified by Coram) teaches: "The cache management system of Claim 24, wherein the in-memory database management system further includes a storage portion for storing the data utilized by the application [TimesTen, p. 591, paragraph under section header 4.3]... operable to maintain a rule event related to the rule for caching data, the rule event pointing to a location in the storage portion of the in-memory database where the data related thereto is stored" [TimesTen, p. 591-592, section 4.2-4.3 with TimesTen, p. 591, paragraph above section header 4.2].

TimesTen (as modified by Coram) discloses the above limitations but does not expressly teach: "...and a table."

With respect to Claim 27, an analogous art, Ricketts, teaches: "...and a table" [Ricketts, col. 12, lines 46-59 with Fig. 37A].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Ricketts with TimesTen (as modified by Coram) because both inventions are directed towards databases.

Ricketts's invention would have been expected to successfully work well with TimesTen (as modified by Coram)'s invention because both inventions use databases. TimesTen (as modified by Coram) discloses a an in-memory database data manager with mid-tier caching comprising maintaining rules for cache management, however TimesTen (as modified by Coram) does not expressly disclose the use of a rules table for maintaining these rules. Ricketts discloses stock purchase indices comprising a table of filters (rules).

It would have been obvious to one of ordinary skill in the art at the time of invention to take the table from Ricketts and install it into the system of TimesTen (as modified by Coram), thereby offering the obvious advantage of TimesTen (as modified by Coram) using it own data structures (tables in memory) to access the rules for caching fast, thereby increasing the speed of the combined invention.

Claim 28 can be mapped to TimesTen (as modified by Coram and Ricketts) as follows: "The cache management system of Claim 27, wherein the wrapper is further operable to provide at least a portion of the data from the application and a component of the rule to the in-memory database" [TimesTen, p. 589, paragraph under section header 3 with TimesTen, p. 590, paragraph under section header 4 with TimesTen, p. 591-592, section 4.3].

Claim 29 can be mapped to TimesTen (as modified by Coram and Ricketts) as follows: "The cache management system of Claim 28, wherein the engine is further operable to poll the in-memory database and apply the rule related to the rule event to

Art Unit: 2161

the data" [TimesTen, p. 591-592, section 4.2-4.3, with/or Coram, paragraphs [0046]-[0052], [0054], and [0056]].

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2161

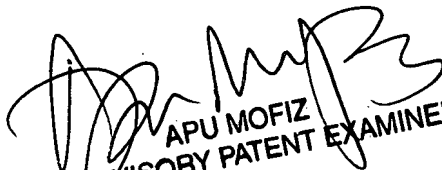
Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brent S. Stace whose telephone number is 571-272-8372 and fax number is 571-273-8372. The examiner can normally be reached on M-F 9am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu M. Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brent Stace *B.S.*


APU MOFIZ
SUPERVISORY PATENT EXAMINER

Can